

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 1 022 020 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
25.04.2001 Bulletin 2001/17

(51) Int. Cl.<sup>7</sup>: A61K 9/16, A61K 9/50

(43) Date of publication A2:  
26.07.2000 Bulletin 2000/30

(21) Application number: 00106329.6

(22) Date of filing: 02.10.1995

(84) Designated Contracting States:  
AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT  
SE

(30) Priority: 30.09.1994 JP 23684694

(62) Document number(s) of the earlier application(s) in  
accordance with Art. 76 EPC:  
95115568.8 / 0 709 085

(71) Applicant:  
Takeda Chemical Industries, Ltd.  
Osaka-shi, Osaka 541 (JP)

(72) Inventors:

- Takada, Shigeyuki  
Hyogo 662-0052 (JP)
- Kurokawa, Tomofumi  
Kawabe-gun, Hyogo 666-02 (JP)
- Iwasa, Susumu  
Tsuzuki-gun, Kyoto 610-3 (JP)

(74) Representative:

Winter, Brandl, Fürnlss, Hübner, Röss,  
Kalser, Polte  
Partnerschaft  
Patent- und Rechtsanwaltskanzlei  
Alois-Stelnecker-Strasse 22  
85354 Freising (DE)

(54) Sustained-release preparation

(57) A microcapsule comprising an amorphous water-soluble physiologically active substance, an osmotic pressure adjustor and a polymer; and a process for producing a microcapsule, which comprises dispersing in an aqueous phase a dispersion of an amorphous water-soluble physiologically active substance in a solution of a polymer in an organic solvent to prepare an s/o/w type emulsion and subjecting the emulsion to in-water drying.

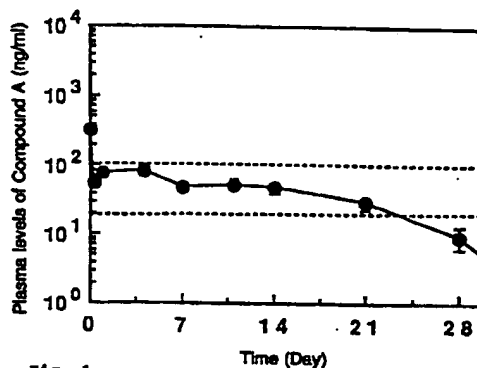


Fig. 1

EP 1 022 020 A3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 6329

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 582 459 A (TAKEDA) 9 February 1994 (1994-02-09) * claims 1,2,7-9 * * column 14; example 1 *	1-5,9	A61K9/16 A61K9/50
X	US 4 656 027 A (ROLF I. SJÖÖVIST) 7 April 1987 (1987-04-07) * claim 1 * * column 4; example 2 *	1-4,7	
X	EP 0 315 875 A (HOECHST) 17 May 1989 (1989-05-17) * claims 1,5 * * page 3, line 37 - line 47 *	1-5,7-10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A61K
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>27 February 2001</b>	Examiner <b>Ventura Amat, A</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 (03.02) (P4C011)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 10 6329

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-02-2001

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 582459	A	09-02-1994	AT 161716 T	15-01-1998
			CA 2103518 A	08-02-1994
			DE 69316101 D	12-02-1998
			DE 69316101 T	22-10-1998
			DK 582459 T	27-04-1998
			ES 2110573 T	16-02-1998
			GR 3026291 T	30-06-1998
			HU 65235 A, B	02-05-1994
			JP 2608242 B	07-05-1997
			JP 6145046 A	24-05-1994
			US 5611971 A	18-03-1997
US 4656027	A	07-04-1987	AR 231801 A	29-03-1985
			AT 22007 T	15-09-1986
			CA 1208559 A	29-07-1986
			CY 1491 A	16-02-1990
			DE 3273153 D	16-10-1986
			EP 0069097 A	05-01-1983
			ES 513202 D	16-08-1983
			ES 8308211 A	16-11-1983
			FI 822191 A, B,	19-12-1982
			HK 62689 A	11-08-1989
			IL 65859 A	31-12-1986
			JP 1770206 C	30-06-1993
			JP 4060968 B	29-09-1992
			JP 58004714 A	11-01-1983
			KR 8801752 B	12-09-1988
			MY 29787 A	31-12-1987
			PH 19626 A	04-06-1986
EP 315875	A	17-05-1989	SE 8103843 A	19-12-1982
			SG 36389 G	13-10-1989
			DE 3738228 A	24-05-1989
			AU 2503788 A	25-05-1989
			DK 627488 A	12-05-1989
			FI 885152 A	12-05-1989
			JP 1155942 A	19-06-1989
			NO 885013 A	12-05-1989
			PT 88974 A	30-11-1989
			ZA 8808396 A	26-07-1989

EPO FORM P4008

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82